

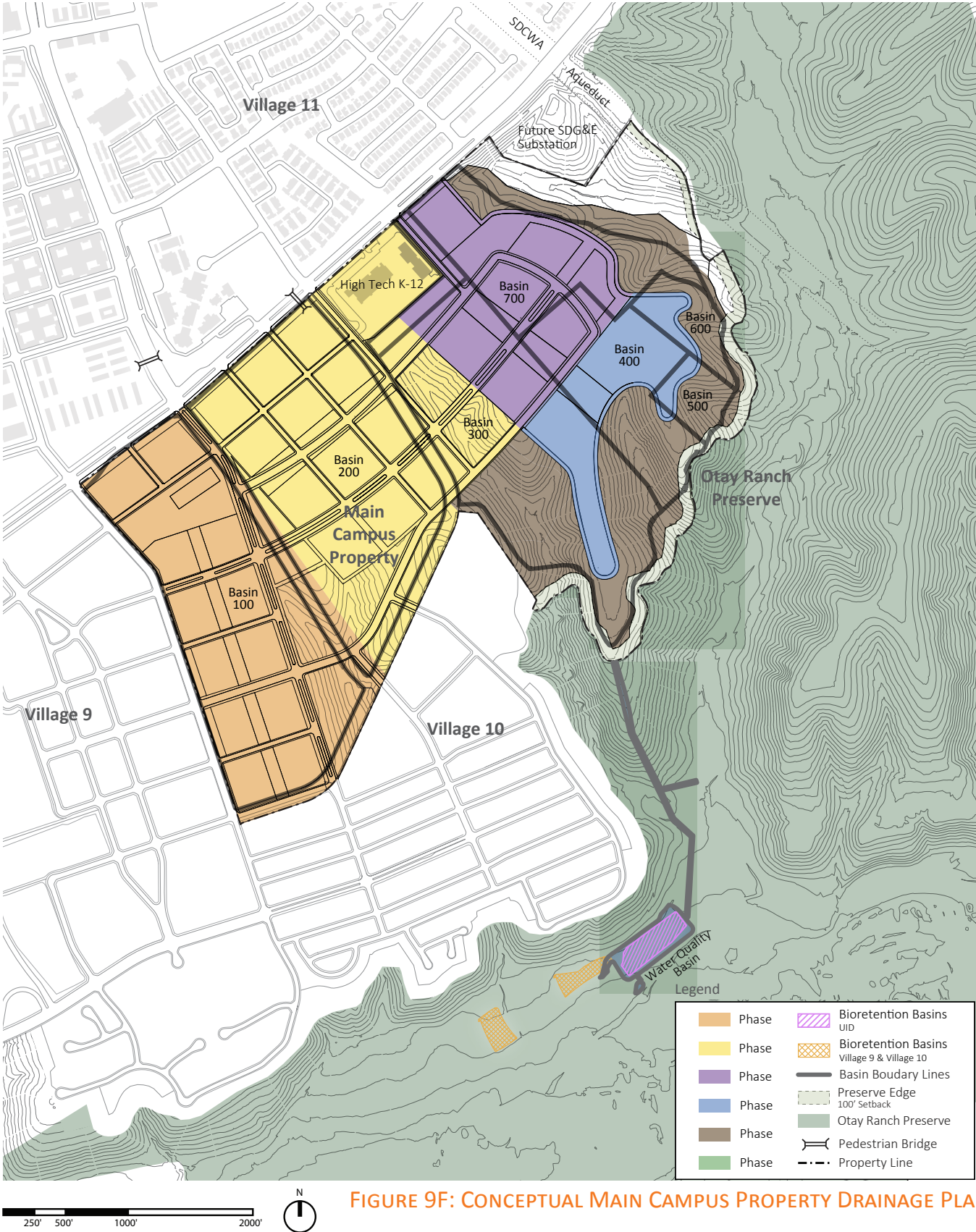
## 9.4. Storm Drain & Urban Run-off

The *Drainage Study for the University Park and Innovation District* prepared by Rick Engineering Company dated September 17, 2015, assessed the existing and developed drainage and water quality conditions in the UI District. In conformance with the GDP and SPA requirements, the Drainage Plan provides the necessary hydrological studies, analysis and design solutions to provide appropriate urban run-off and water quality for the SPA Plan. Key elements of the Drainage Plan and water quality are provided below.

### 9.4.1. Drainage Characteristics

The UI District includes ten major drainage basins: Basins 100, 200, 300, 400, 500, 600, 700, 1000, 1100, and 1200. For locations of these drainage basins, refer to Figure 9F: Conceptual Main Campus Property Drainage Plan. In the pre-project condition, run-off from Basins 100 and 200 sheet-flows in a southerly direction towards Otay River. Run-off from Basins 300, 400, 500, 600, and 700 sheet-flows in a southeasterly direction towards Salt Creek, which flows in a southerly direction and confluences with Otay River. For the Lake Property, run-off from Basins 1000, 1100, and 1200 sheet-flows in an easterly directions towards three existing culvert crossings beneath Wueste Road and outlets into Lower Otay Reservoir.

In the post-project condition, the general drainage characteristics will remain similar as compared to the pre-project condition. Run-off from Basins 100 and 200 will be conveyed in the southerly direction via a network of the on-site proposed storm drain systems, which will connect to the proposed storm drain system that is part of the future Village 10 development and directly discharge into Otay River. Run-off from Basins 300, 400, 500, 600, and 700 will be conveyed in a southwesterly direction via a network of on-site proposed storm drain systems and a proposed storm drain system through an off-site easement that will outlet into a proposed storm water management feature (i.e. – bioretention basin) located northwest of the confluence of Salt Creek and Otay River and discharge directly into Otay River. Run-off from Basins 1000, 1100, and 1200 will be conveyed in an easterly direction via a network of on-site proposed storm drain systems towards the proposed storm water management features (i.e. – bioretention basins) for Basins 1100 and 1200 (except Basin 1000 will be a self-treating area) and outlet into Lower Otay Reservoir via three proposed culvert crossings in the future that will replace the three existing culvert crossings beneath Wueste Road. See Figure 9F: Conceptual Main Campus Property Drainage Plan and Figure 9G: Conceptual Lake Property Drainage Plan.





For the Main Campus Property, discharge locations are within the lower portion of the Otay River so the increase to peak run-off rates is not considered significant, as the increased run-off entering the lower portion of the Otay River would be conveyed downstream prior to the peak run-off within the overall Otay River Watershed reaching this lower portion of the river. With regards to potential erosion, the proposed storm drain system (to be constructed by for Village 10) will include an energy dissipater designed to reduce discharge velocities to non-erosive conditions.

For the Lake Property, the discharge locations are conveyed directly to the Lower Otay Reservoir. The increase to peak run-off rates is not considered significant as the increased run-off entering the Lower Otay Reservoir would be stored as part of the overall water supply. With regards to potential erosion, the proposed storm drain systems conveying flow under Wueste Road will include an energy dissipater designed to reduce discharge velocities to non-erosive conditions, prior to conveyance directly into the Lower Otay Reservoir which provides energy dissipation based on the ponded water surface elevation.

In the event that the Otay Ranch Village 10 project is not in place prior to or in conjunction with the development of the initial development phases, a similar bioretention basin approach would be implemented within the project footprint during the initial phases as an interim BMP until the ultimate BMP solutions are installed with Village 10.

With regards to drainage infrastructure, the temporary on-site basins would include temporary storm drain outfalls into the existing canyon areas along the southerly edge of the UI District boundary, within the development footprint (unless environmental approvals are in place to extend south of the UI District boundary), in order to mimic pre-project drainage boundaries. The temporary basins would be designed for both water quality volume and hydromodification management criteria since the existing tributaries between the project and the Otay River are not exempt from Hydromodification Management Plan (HMP) criteria.



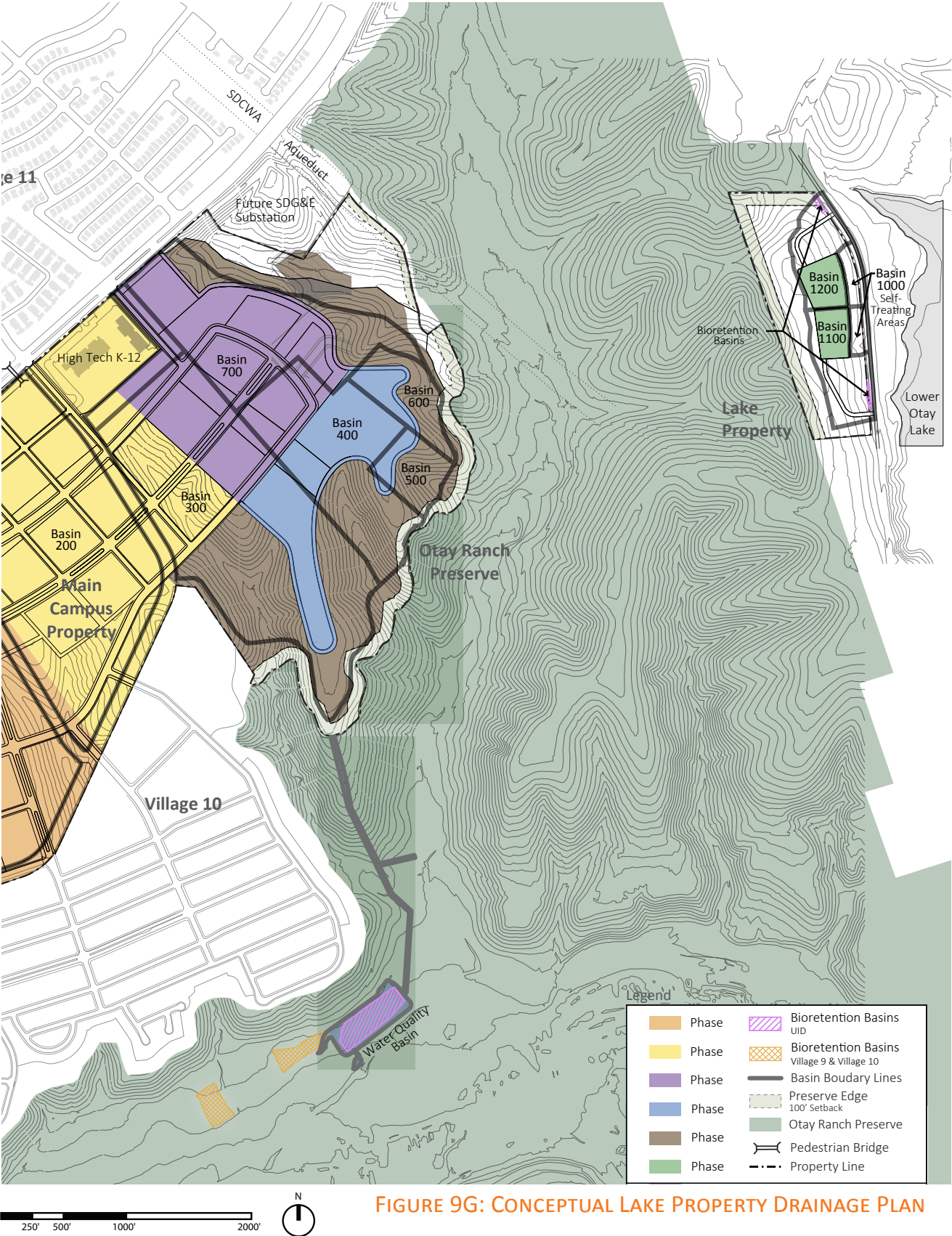


FIGURE 9G: CONCEPTUAL LAKE PROPERTY DRAINAGE PLAN



### 9.4.2. Water Quality

Development within the UI District is considered a Priority Development Project (PDP) according to the City of Chula Vista guidance manual titled, *BMP Design Manual for Permanent Site Design Storm Water Treatment and Hydromodification Management*, dated December 2015.

The development will be required to implement all necessary requirements for water quality as specified by the State and local agencies. The development will meet the requirements of the City's SUSMP, the Jurisdictional Urban Run-off Management Plan and the Storm Water Management and Discharge Ordinance, as specified in the City of Chula Vista's BMP Design Manual. In general, a combination of Low Impact Development (LID) site design, source control and treatment control. Best Management Practices (BMP) will be utilized for UI District Development.

The bioretention basins do not have concrete portions. The bioretention basins should be planted/landscaped with native plant species based on a specific group of plant species that are suitable for bioretention basins. The selection of the plant palette is typically coordinated with the landscape architect when construction documents are developed.

The Otay River is a United States Geological Survey (USGS) blue line stream, which makes it a waterway of the United States under the CWA. All development in excess of five acres must incorporate urban run-off planning, which will be detailed at the Tentative Tract Map level. The conceptual grading and storm water control plan for the SPA Plan provides for water quality control facilities to ensure protection for the Otay River. At this time it is unknown if the Otay River will remain an exempt receiving water for Hydromodification Management Plan purposes. Development will meet the requirements at the time of application for permit.

For the Main Campus Property, a total of three bioretention basins are proposed including two bioretention basins to be constructed as part of the adjacent Village 10 that will treat the Orange and Yellow Phases, one large bioretention basin that will treat Purple, Blue and Brown Phases. Flows from the Main Campus Property will outlet directly to the Otay River.

The Lower Otay Reservoir is a drinking water reservoir owned and operated by the City of San Diego Water Department. To protect reservoirs, the City of San Diego Water Department prepared a document titled, *Source Water Protection Guidelines for New Developments*, dated January 2004, to guide future activities within the San Diego County watersheds which drain into drinking water reservoirs.

For the Lake Property, BMPs ensure a high level of treatment for storm water runoff in order to protect Lower Otay Reservoir with a total of two proposed bioretention basins designed to treat storm water runoff before it enters the Lower Otay Reservoir.

An Operation and Maintenance Plan (O&M Plan) will be prepared to describe the designated responsible parties to manage the proposed BMPs and the training requirements, operating schedule, maintenance frequency, routine service schedule, specific maintenance activities, record keeping requirements and any other necessary activities. For the UI District, it is anticipated that the City of Chula Vista is will maintain the proposed BMPs. If a separate entity is identified prior to UI District completion, the UI District owner is the responsible party for funding and maintenance of the BMPs implemented on-site.



## 9.5. Roads

UI District roads are addressed in Chapter 4: Circulation Plan. The PFFP details their phasing and financing.

## 9.6. Schools

The Otay Ranch GDP requires preparation of a School Master Plan for each SPA. No schools are provided in the UI District. The need for any school facilities is addressed in the PFFP.

## 9.7. Child Care Facilities

The GDP encourages siting child care facilities where compatible with land use to be available, accessible and affordable for all economic levels. The UI District and the Otay Ranch Community as a whole may have a mix of child care providers, such as school, church, non-profit or commercial facilities. Childcare facilities may be located within private homes, commercial centers, offices, government and industrial complexes and/or adjacent to public and private schools where appropriate. The UI District Land Use Plan provides opportunities to locate and phase facilities to meet the needs of the community.

Child care uses are allowed as an affiliated use with an Administrative Conditional Use Permit in all transects except in the SD: Lake Blocks. Facility-based (not in home) child care may be conducted by non-profit, quasi-public organizations or commercial providers as an affiliated use in all transects except in the SD: Lake Blocks. Both Child Care Centers and Facility-Based Child Care are permitted as a non-affiliated use with a Conditional Use Permit.

Home-based child care includes small family day care homes (SFDCH) that serve up to 8 children and large family day care homes (LFDCH) that serve 9-14 children. Consistent with CVMC 19.04, SFDCHs could potentially be located within all residences in the UI District. However, typically the size of homes allowed in the UI District will not be large enough to operate many home-based child care.

The State of California adopted regulations related to licensing, application procedures, administrative actions, enforcement provisions, continuing requirements and physical environment for child day care, day care centers and family day care homes. All child care facilities within UI District shall comply with State and local regulations.



## 9.8. Police, Fire and Emergency Services

### 9.8.1. Police Protection

The Chula Vista Police Department (CVPD) currently provides police services within the City of Chula Vista. The demand for police services and facilities necessary to serve the SPA Plan is described and analyzed in the UI District PFFP.

### 9.8.2. Fire Protection

Fire protection services are provided by the City of Chula Vista Fire Department (CVFD). Currently the nearest Fire Station is Fire Station #7, located in Village 2. Pursuant to the draft Chula Vista Fire Master Plan, approved by the Chula Vista City Council on January 28, 2014, an additional fire station is planned within the Village 8 West Town Center. In addition, a new fire station is approved within the within Millenia development. The demand for fire protection equipment and facilities to serve the SPA Plan is described in the PFFP. The UI District must comply with the Chula Vista Fire Facility Master Plan (1/28/14), as adopted.

The FPP for UI District has been developed with direction from the Fire Department. Fire Department-approved architectural measures, such as boxed eaves, exterior sprinkler systems and solid block wall fencing may also be used for fire protection in certain circumstances. The fuel modification and fire protection strategies are more fully described in the FPP.

### 9.8.3. Brush Management

Pursuant to the UI District FPP and Chula Vista MSCP Subarea Plan; fuel modification zones have been incorporated into the UI District development areas adjacent to natural open space. These fuel modification zones are consistent with the requirements of the Chula Vista MSCP Subarea Plan and Otay Ranch Phase 2 RMP. No fuel modification activities will occur within Otay Ranch Preserve/MSCP areas. Graded landscaped slope areas will be maintained pursuant to FPP requirements and will be outside of the Otay Ranch Preserve. Streets (hard surface and irrigated landscaped areas) may be included in the Brush Management Zone, in accordance with any specific requirements of the FPP.

#### 9.8.4. Emergency Medical Services

American Medical Response (AMR) provides contract emergency medical services for the City of Chula Vista, National City, and Imperial Beach. There are five AMR South County paramedic units. Two are located in Chula Vista, two in National City, and one in Imperial Beach. The UI District will be served through a contract arrangement between the City of Chula Vista and AMR.

#### 9.8.5. Emergency Disaster Plan

The San Diego Region is exposed to a number of hazards that have the potential for disrupting communities, causing damage and creating casualties. Possible natural disasters include earthquakes, floods, fires, landslides and tropical storms. There is also the threat of man-made incidents such as war, nuclear disasters, hazardous materials spills, major transportation accidents, crime, fuel shortages, terrorism or civil disorder.

The San Diego County Emergency Plan is a comprehensive emergency management system that provides for a planned response to disaster situations associated with natural disasters, technological incidents and nuclear defense operations. The Plan includes operational concepts relating to various emergency situations, identifies components of the Emergency Management Organization and describes the overall responsibilities for protecting life and property and assuring the overall well-being of the population. The Plan also identifies the sources of outside support that might be provided (through mutual aid and specific statutory authorities) by other jurisdictions, state and federal agencies and the private-sector.

The Unified San Diego County Emergency Services Organization consists of the County and the cities within the County. It was established in 1961 and provides for “preparing mutual plans for the preservation of life and property and making provisions for the execution of these plans in the event of a local emergency, state of emergency, and to provide for mutual assistance in the event of such emergencies.”

The foundation of California's emergency planning and response is a statewide mutual aid system that is designed to ensure that adequate resources, facilities and other support are provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation. The basis for the system is the California Disaster and Civil Defense Master Mutual Aid Agreement, as provided for in the California Emergency Services Act. This Agreement was developed in 1950 and adopted by California's unincorporated cities and by all 58 counties. San Diego County is in Mutual Aide Region 6 of the State system.

The City of Chula Vista participates in the Unified County Emergency Services Organization described above. The City of Chula Vista has comprehensive agreements with the Bureau of Land Management, California Department of Forestry, California Conservation Corps., Urban Search and Rescue Corps., San Diego County Fire Mutual Aid and other agencies in conjunction with the California Disaster and Civil Defense Master Mutual Aid Agreement. The project is incorporated into Chula Vista's existing emergency disaster programs, including all fire and emergency services and mutual aid agreements. In April 2011, the City of Chula Vista City Council approved Resolution 2011-067 which adopted the 2010 San Diego County Multi-Jurisdictional Hazard Mitigation Plan as the official Multi-Jurisdictional Hazard Mitigation Plan of the City of Chula Vista.

### 9.9. Library Services

Library services are provided by the City of Chula Vista as described by the City Library Master Plan.

### 9.10. Parks, Recreation, Open Space & Trails Facilities

Recreation, open space and trails are addressed in Chapter 5, Parks and Open Space and Trails Master Plan and the PFFP.

### 9.11. Civic Facilities

The City of Chula Vista is currently served by the Chula Vista Civic Center. The City's master plan for the expansion of the Civic Center provides for the needs of the UI District.





## **9.12. Animal Control Facilities**

The City of Chula Vista provides animal health and regulatory services. Currently, no impact fees are imposed to fund expansion of animal control facilities.

## **9.13. Regional Facilities**

A Regional Facilities Report was completed as part of the SPA One planning process. Generally, the Otay Ranch GDP requires that the demand generated for regional facilities be satisfied through participation in a regional impact fee program (if such a program is implemented). The Regional Facilities Report is updated with SPA Plan applications to ensure adequate provision for regional facilities. The following is a review of the updated Otay Ranch regional facilities needs.

### **9.13.1. Integrated Solid Waste Management**

The City of Chula Vista contracts with Allied Waste Services to provide weekly solid waste collection, recycling and disposal. Per CVMCs Sections 8.24 and 8.25 and State of California Public Resources Code Chapter 12.8, 42649, it is mandatory for all generators to recycle. The City provides residences (known as Small Quantity Generators) with automated, weekly collection services for trash, recyclables and yard waste. All development shall comply with these requirements.

### **9.13.2. Arts and Cultural**

The Otay Ranch GDP provides for a multi-use cultural complex in the Millenia development. The UI District provides public spaces that may accommodate art and performances. Cultural facilities are permitted in all transects.

### **9.13.3. Health and Medical**

Health and medical facilities that serve the UI District include Scripps Chula Vista Memorial Hospital, Sharp Chula Vista Medical Center, and Paradise Valley Hospital. A 66,000 square foot medical office building is located in Village of Heritage, which houses the Sharp Rees-Stealy Medical Group. The mixed use commercial and community purpose facility sites within the Otay Ranch villages provide opportunities for both public and private nursing, health education, screening research and medical offices.

#### **9.13.4. Community and Regional Purpose Facilities**

The Otay Ranch GDP does not locate a Regional Purpose Facility in UI District.

#### **9.13.5. Social and Senior Services**

The County of San Diego has the primary responsibility to provide social services to County residents. There are numerous non-profit health and social service organizations located in Chula Vista. The City of Chula Vista provides an adult literacy program, a Youth Action Program and the Police Activities League program. The County's Area Agency on Aging provides social and nutrition programs, legal services, ombudsman programs and services to prevent or postpone institutionalization. The City of Chula Vista provides senior services and the Parks and Recreation Department coordinates activities and programs at the Norman Park Senior Center.

#### **9.13.6. Correctional**

The increased population in UI District will contribute to the need for correctional facilities. Should a regional impact fees program be enacted to assist in funding such facilities, the UI District development would be obligated to equitably participate.

#### **9.13.7. Transit**

Transit facilities are intended to reduce the public's dependence upon the automobile to help alleviate traffic congestion. The provision of transit facilities is also an action measure of the City's CO2 Reduction Plan. Currently, two percent of trips are conducted on public transit in the region. An increase in transit use can be fostered through the location of higher-density housing near transit, site design with transit orientation and enhanced pedestrian access to transit. The land use and circulation plan for the UI District incorporates multi-modal design strategies. A transit station/stop for the proposed Bus Rapid Transit system is located on Orion Avenue on the eastern edge of the UI District. Rapid Bus service is proposed on Main Street/Hunte Parkway. Additional discussion of transit facilities is provided in the PFFP.